

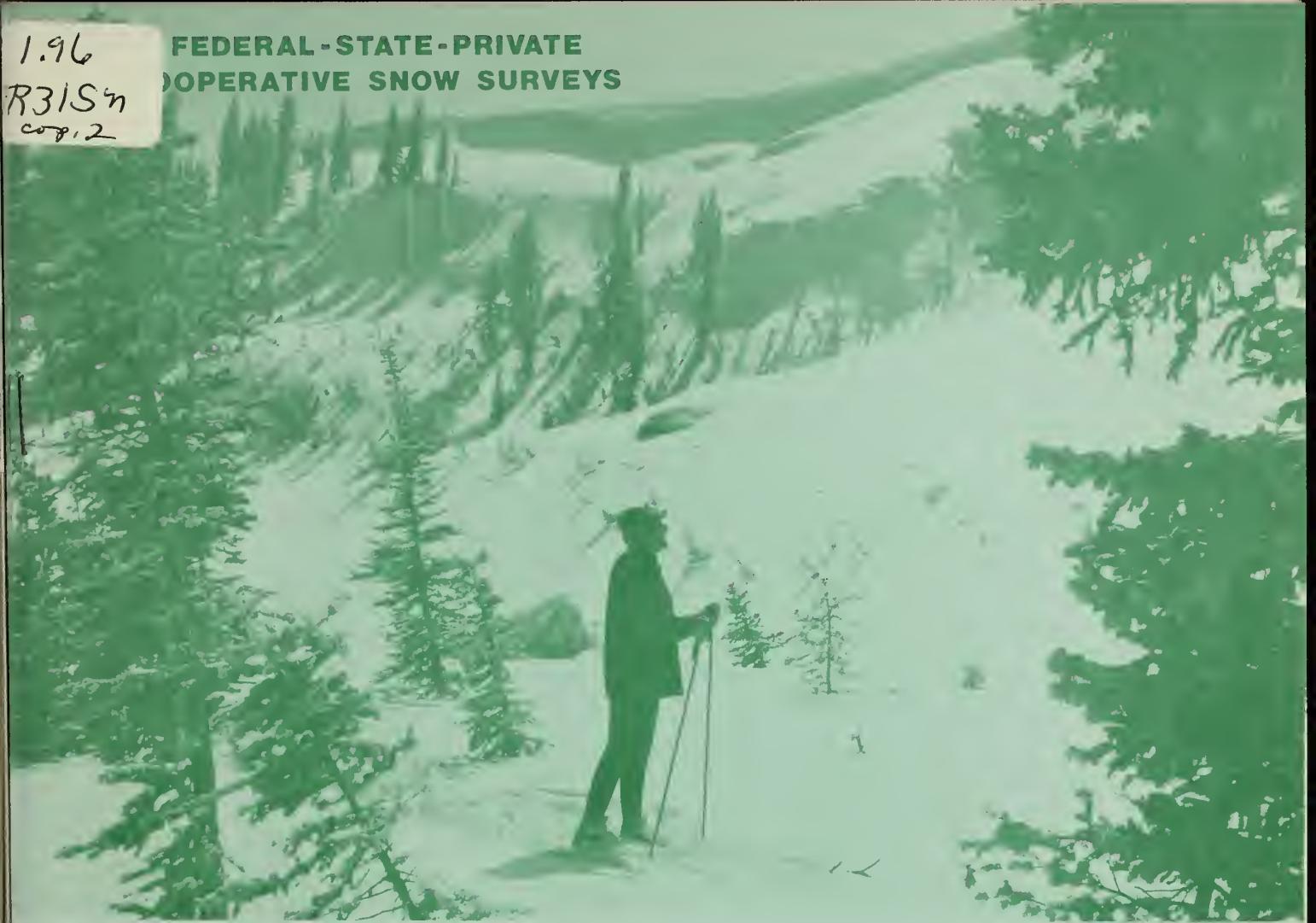
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FEDERAL-STATE-PRIVATE  
OPERATIVE SNOW SURVEYS



# WATER SUPPLY OUTLOOK FOR ARIZONA

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PROCUREMENT SECTION  
CURRENT SERIAL RECORDS

Prepared by

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

SALT RIVER VALLEY WATER USERS ASSOCIATION  
and  
ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with the Federal, State and private organizations listed on the last page of this report.

AS OF  
MAR. 15, 1971

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

## PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

## PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



# **WATER SUPPLY OUTLOOK FOR ARIZONA**

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

*Issued by*

**KENNETH E. GRANT**  
ADMINISTRATOR  
SOIL CONSERVATION SERVICE  
WASHINGTON, D.C.

|||||

*Released by*

**MARION E. STRONG**  
STATE CONSERVATIONIST  
SOIL CONSERVATION SERVICE  
PHOENIX, ARIZONA

*In Cooperation with*

**RICHARD K. FREVERT**  
DIRECTOR  
ARIZONA AGRICULTURAL  
EXPERIMENT STATION

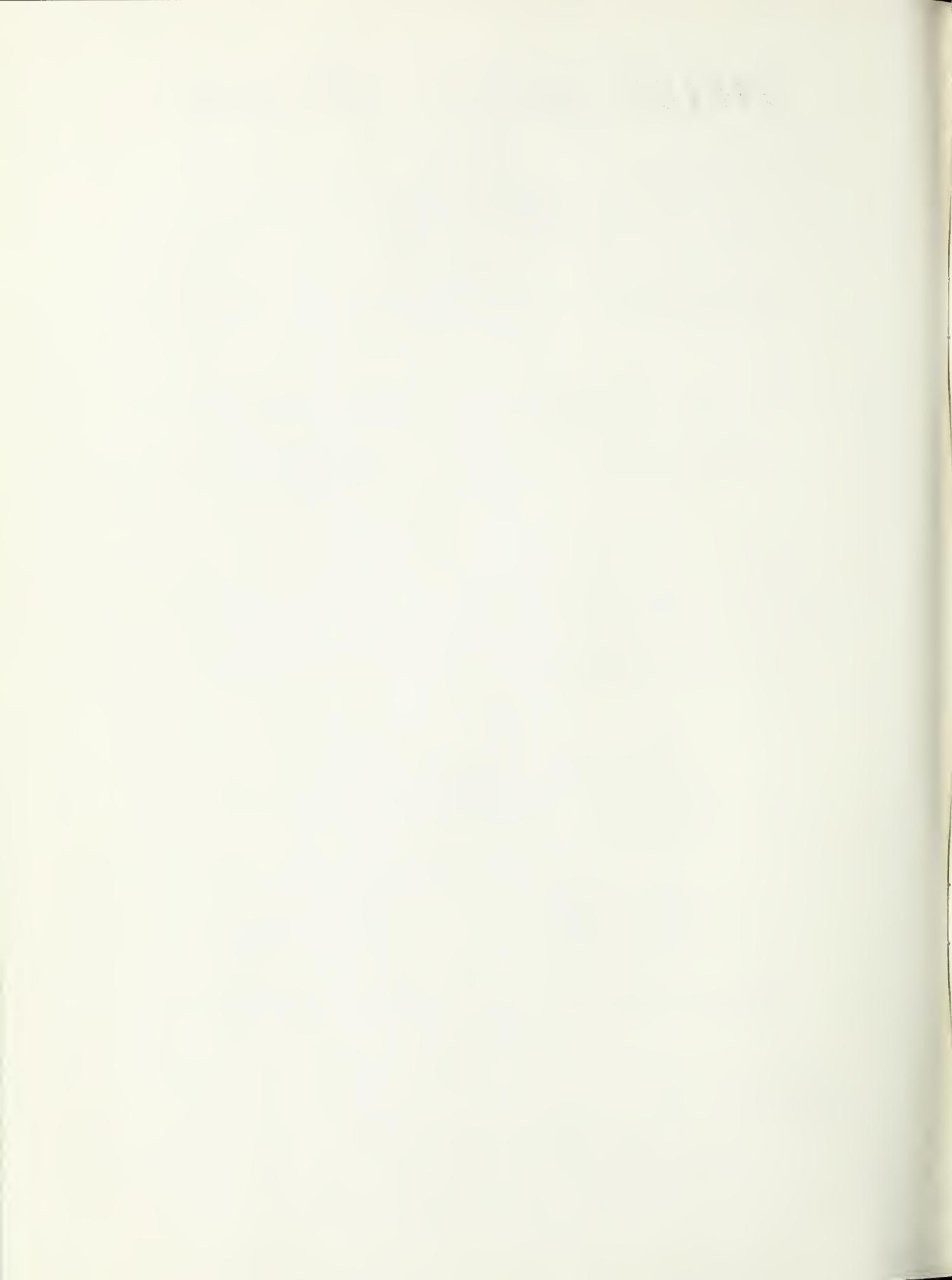
**FLOYD N. SMITH**  
PRESIDENT  
SALT RIVER VALLEY WATER  
USERS ASSOCIATION

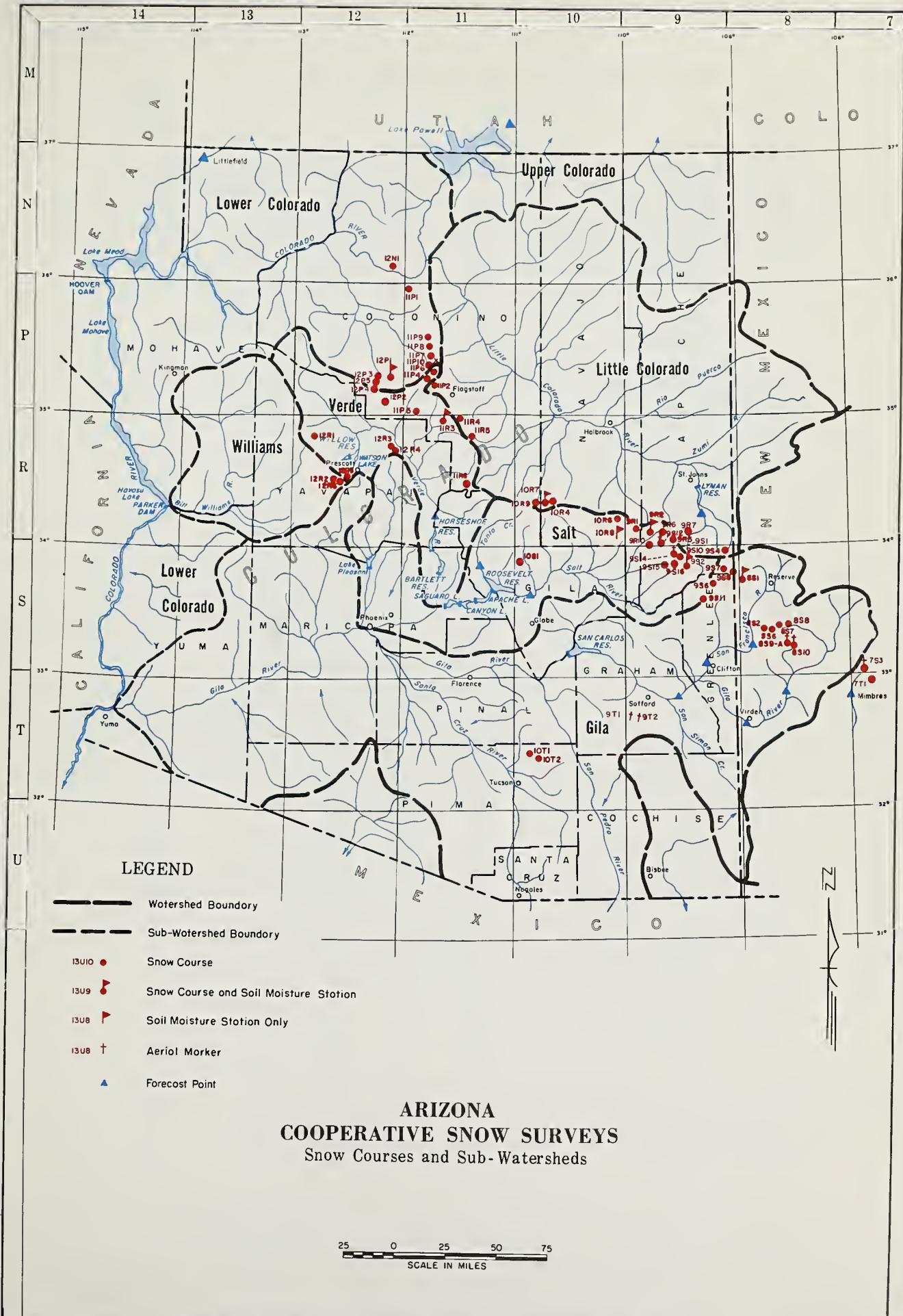
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*Report prepared by*

**RICHARD W. ENZ**, Snow Survey Supervisor

SOIL CONSERVATION SERVICE  
ROOM 6029 FEDERAL BUILDING  
PHOENIX, ARIZONA 85025





## INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER
11P10-A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-USBR
11R6	Baker Butte (p)	4	12N	9E	7300	Verde	SCS
9S1-A	Baldy (p)	28	7N	27E	9125	Little Colorado	SCS
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS-FS
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS-FS
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS
9S6	Beaver Head	13	4N	30E	8000	San Francisco	Pvt-SRP
12P5	Bill Williams Intermediate	17	21N	2E	8550	Cataract	FS
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS
9S10-*	Black River Divide	10	6N	27E	9400	Salt	SCS
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS
12R1	Camp Wood	3	16N	6W	5700	Verde	FS
10R7-M	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS
10R9	Canyon Point (p)	28	11N	14E	7600	Salt	SCS
12P1-M	Chalender	27	22N	3E	7100	Verde	FS
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS
12R6	Copper Basin Divide (p)	23	13N	3W	6720	Verde	SCS
10R8-*	Corduroy Creek	4	8N	21E	6000	Salt	SCS
9S7	Coronado Trail	26	5N	30E	8000	San Francisco	FS
9T2-A	Crazy Horse	34	8S	24E	10200	Gila	FS
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS
11P2	Ft. Valley (p)	22	22N	6E	7350	Little Colorado	FS
8S1-M	Frisco Divide	31	6S	20W**	8000	San Francisco	FS
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	Pvt
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS
9S11	Hannagan Meadows (p)	19	3N	29E	9090	San Francisco	Pvt
11R5	Happy Jack	30	17N	9E	7630	Verde	FS
9R10	Hawley Lake	13	7N	24E	8300	Salt	BIA
10R4	Heber (p)	28	11N	15E	7600	Little Colorado	SCS
9T1-A	High Peak	34	8S	24E	10500	Gila	FS
8S9-A	Hummingbird	19	11S	17W**	10550	Gila	Pvt-SCS
8S6	Ice King	6	11S	18W**	8020	San Francisco	Pvt-SCS
11P9	Inner Basin #1 (p)	28	23N	7E	10000	Little Colorado	SCS-USBR
11P8	Inner Basin #2 (p)	28	23N	7E	9750	Little Colorado	SCS-USBR
11P7	Inner Basin #3	3	23N	7E	10250	Little Colorado	SCS-USBR
12R2	Iron Springs	22	14N	3W	6200	Bill Williams	SCS
9S2-A	Maverick Fork (p)	13	6N	27E	9150	Salt	SCS
7S3-A	McKnight Cabin	10	15S	10W**	9300	Mimbres	Pvt-SCS
9R2-M	McNary	23	8N	23E	7200	Salt	BIA
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA
12R3	Mingus Mountain	3	15N	2E	7100	Verde	Pvt
8S2	Mogollon	2	11S	19W**	7000	San Francisco	Pvt
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS
11R3-M-A	Mormon Mountain (p)	14	18N	8E	7500	Verde	SCS
9S12-A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS
11P5-M	Newman Park	25	19N	6E	6750	Verde	SCS
9S4	Nutrioso	23	6N	30E	8500	San Francisco	FS
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	Pvt
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS
8S8	Silver Creek Divide	4	11S	18W**	9000	San Francisco	Pvt
9S14-A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS
11P4	Snow Bowl #1 (p)	36	23N	6E	10260	Verde	FS
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS
9S8	State Line	6	6S	21W**	8000	San Francisco	FS
12P2	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS
12R5	White Spar	19	13N	2W	6000	Verde	SCS
8S10-A	Whitewater	19	11S	17W**	10750	Gila	Pvt-SCS
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS
9R6	Wilson Lake (p)	4	7N	26E	9000	Salt	SCS
10S1	Workman Creek	33	6N	14E	6900	Salt	FS

M SOIL MOISTURE STA.  
(p) STORAGE GAGE

A AERIAL SNOW DEPTH MARKER

\* SOIL MOISTURE STA. ONLY  
\*\* NM PRINCIPAL MERIDIAN

## ARIZONA WATER SUPPLY OUTLOOK

MARCH 15, 1971

\* Streamflow forecasts have again been reduced as the below normal precipitation pattern continues. Reservoir storage, however, is near normal or above in all reservoirs except San Carlos which is virtually empty. Water supplies will be very short along the Upper Gila and on the San Carlos Project.

### SNOW COVER

Below normal precipitation since March 1 and high daytime temperatures are responsible for a marked decline in snow cover. Only patches of snow remain below 9,000 feet. Although there is 3' to 4' of snow at the higher elevations, the water content is generally less than 12". Snow cover on March 15 was 11% of average on the Gila Watershed, 21% on the Salt and 61% on the Verde.

## PRECIPITATION

Precipitation during the first half of March was much below normal at most weather stations with amounts generally under 1/4 inch. The higher elevation storage gages recorded .5 to 1" except on the Gila Watershed where only about 1/4" was received. Precipitation has now been deficient every month since October.

### SOIL MOISTURE

Above normal soil moisture is present at the higher elevations on the Verde and Salt River Watersheds, but very low everywhere on the Gila. Modest runoff is still possible on the Verde if very heavy precipitation should occur, but not likely on the Salt or Gila.

## RESERVOIR STORAGE

Below normal inflow and increased water use in March is reducing stored water in all major reservoirs in central Arizona. Salt River Project Reservoirs are approximately half full containing 1,065,000 acre-feet. This is slightly less than the average amount in storage on this date, but the lowest in six years. San Carlos Reservoir, however, is practically empty with only 2% of average remaining.

## STREAMFLOW AND WATER SUPPLY

The Salt and Verde Rivers combined are expected to produce one-third of normal runoff this year with only 89,000 acre-feet expected through May. The forecast of 14,000 acre-feet for the Gila at Safford is less than 20% of average.

Water supplies will be adequate this year on the Salt River Project, but very short on the Upper Gila and San Carlos Project. Heavy pumping and a reduction in crop acreage will be required there. A concerted effort to improve irrigation efficiency and reduce conveyance losses will help to make the most of the short water supply.



ABOUT  
**STREAMFLOW FORECASTS**    MARCH 15, 1971

BASIN STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD		
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average +
<b><u>SALT RIVER DRAINAGE</u></b>					
Salt near Roosevelt	54.0	26	Mar-May	135.6	202.4
Tonto Creek near Roosevelt	3.8	17	Mar-May	10.4	22.5
Verde River above Horseshoe	46.0	43	Mar-May	81.2	106.5
<b><u>GILA RIVER DRAINAGE</u></b>					
Gila River near Gila	11.0	34	Mar-May	21.6	32.3
Gila River near Solomon	14.0	19	Mar-May	38.0	73.0
Gila River near Solomon	6.0	16	March	19.3	38.4
Gila River near Virden	8.0	22	Mar-May	22.4	36.3
Frisco River at Clifton	8.0	28	Mar-May	20.0	38.7
Frisco River at Glenwood	3.0	23	Mar-May	6.5	16.0
<b><u>MIMBRES RIVER DRAINAGE</u></b>					
Mimbres River near Mimbres	0.5	21	Mar-May	.5	2.4
<b><u>COLORADO RIVER DRAINAGE</u></b>					
Little Colo. River above Lyman Dam	0.7	9	Mar-June	4.9	7.8
Colorado River -- Lake Powell Inflow *	7180.0	110	Apr-July	8220.0	6527.0
<b><u>VIRGIN RIVER DRAINAGE</u></b>					
Virgin River nr. Littlefield	34.0	102	Apr-June	12.7	33.4
<b><u>GRANITE CREEK DRAINAGE</u></b>					
Granite Creek	0.5	---	Mar-May	---	---
Willow Creek	0.3	---	Mar-May	---	---

+ Based on the 15-year period, 1953-67

\* Forecast issued by  
 Soil Conservation Service,  
 Salt Lake City, Utah



## RESERVOIR STORAGE (Thousand Acre Feet) MID-MONTH READING

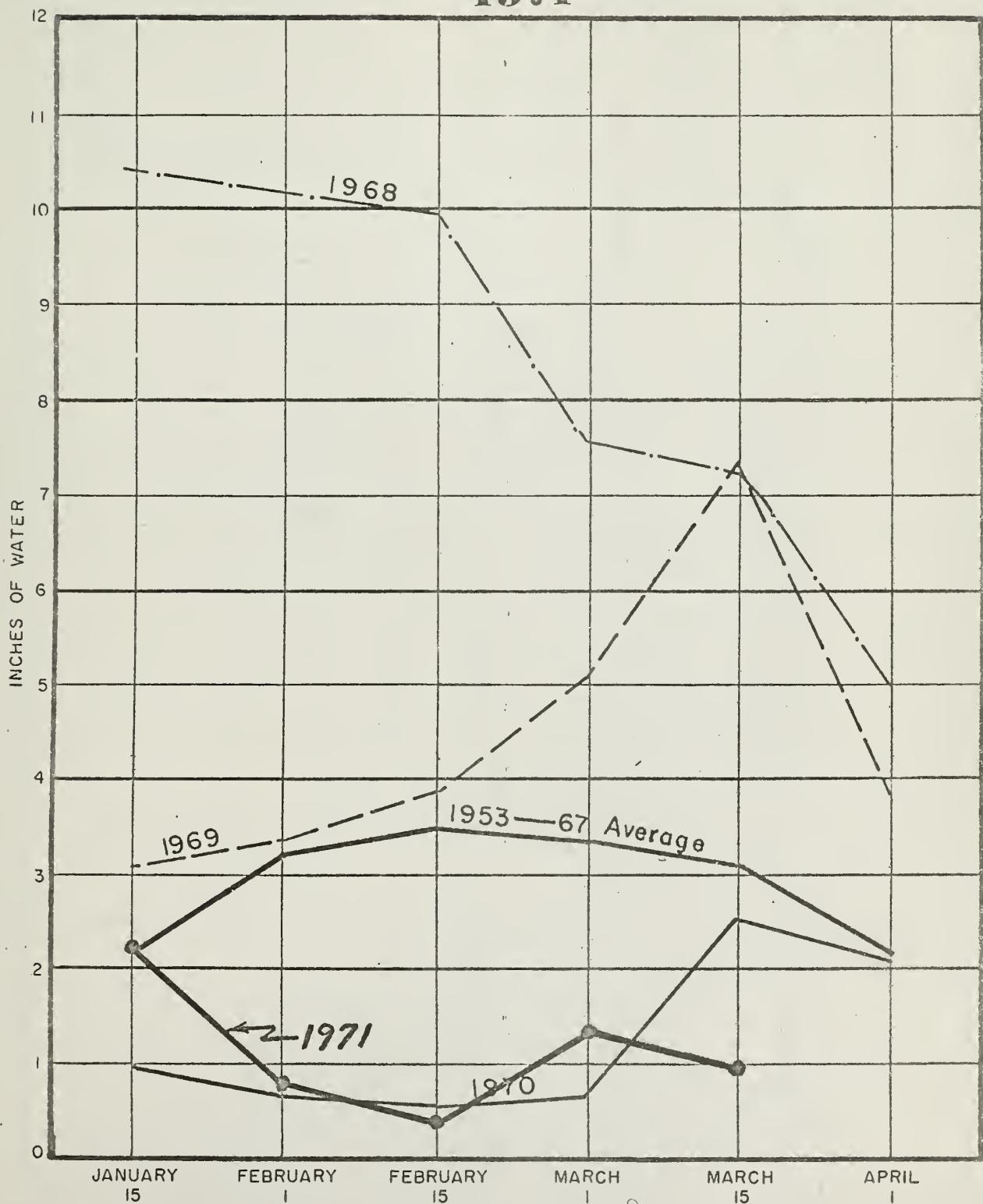
ABOUT MARCH 15, 1971

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average <sup>+</sup>
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	74.2	76.7	42.7
Granite	Watson Lake	4.7	1.9	3.2	---
Granite	Willow Creek	6.1	1.1	2.4	---
Gila	San Carlos	984.6	2.3	181.4	111.4
Verde (2)	Bartlett & Horseshoe	317.7	165.4	133.8	123.3
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1755.0	899.8	1273.6	986.7
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	548.1	543.2	537.6
Colorado	Lake Mohave	1810.0	1702.9	1716.0	1708.5
Colorado	Lake Mead	26159.0	16460.0	16731.0	16268.3
Colorado	Lake Powell	25002.0	12376.0	9553.0	---
Little Colorado	Lyman	30.6	11.6	20.4	9.7
Little Colorado	Show Low Lake	5.1	0.3	0.2	1.7*

<sup>+</sup> Based on 15-year period, 1953-67  
 \* Average is for less than 15 years of record



# RELATIVE SNOW WATER ACCUMULATION ARIZONA 1971



*This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.*



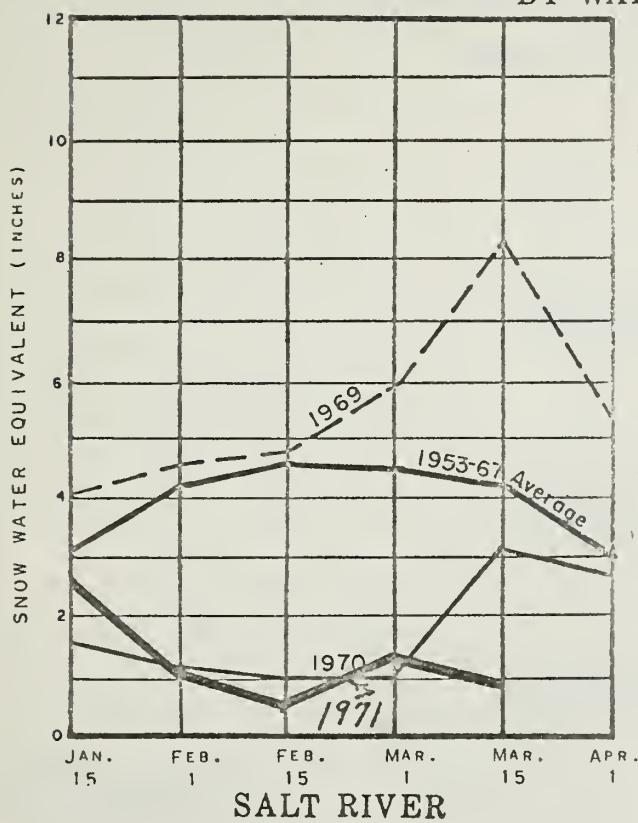
## SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

MARCH 15, 1971

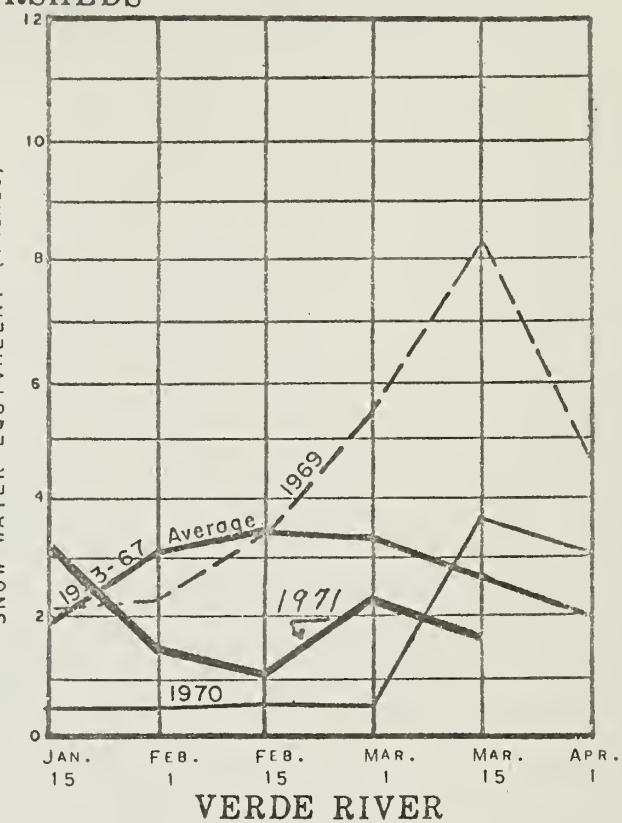
RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
Gila	10	15	11
Salt	10	29	21
Verde	10	45	61
Little Colorado	5	61	50



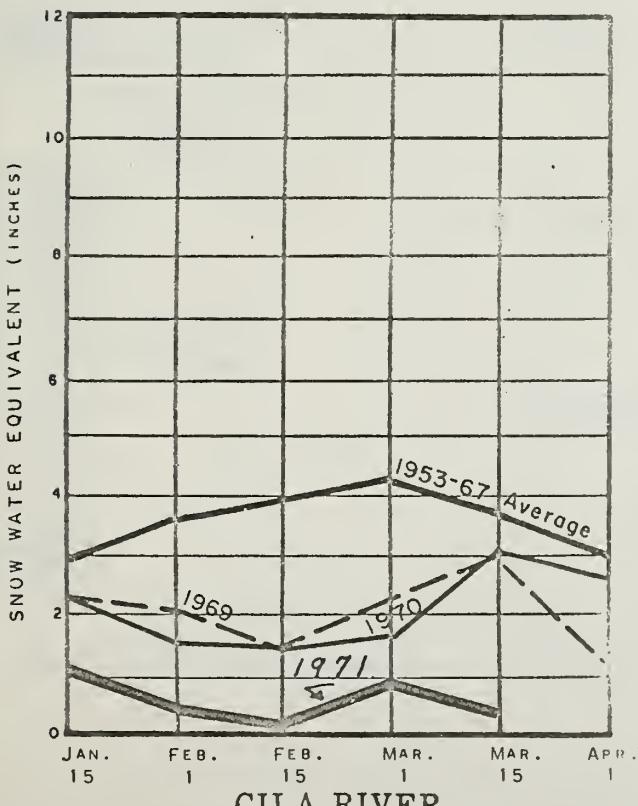
1971  
ARIZONA SNOW COVER  
BY WATERSHEDS



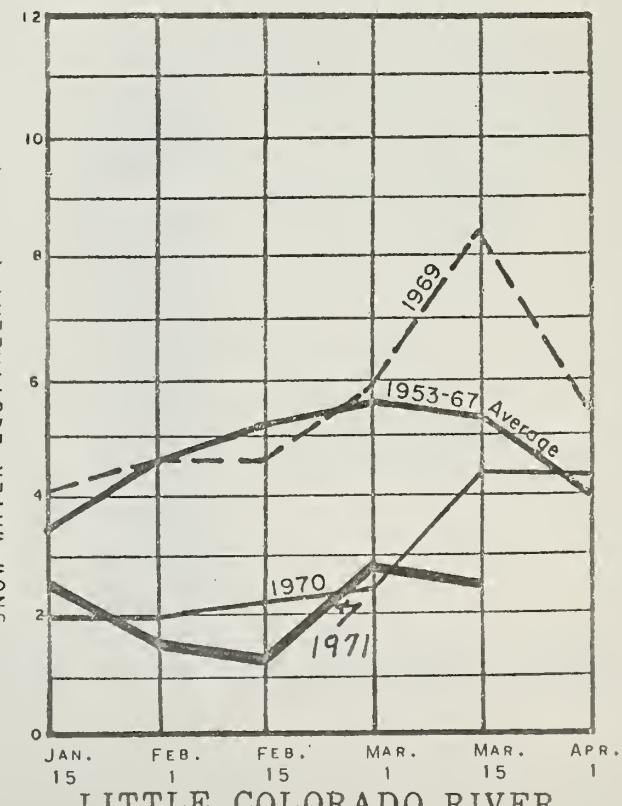
SALT RIVER



VERDE RIVER



GILA RIVER



LITTLE COLORADO RIVER



WATER SUPPLY INVENTORY

SALT RIVER VALLEY SYSTEM

MARCH 15, 1971

3,000,000

2,500,000

2,000,000

AVERAGE SUPPLY ON  
MARCH 15



Average Summer  
Runoff

Average Spring  
Runoff

Average  
Storage

1,500,000

1,000,000

500,000

0

ANTICIPATED 1971 SUPPLY \*



Average Summer Runoff  
Forecast Runoff  
(March 15 - May)

Present Storage

\* Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff



## SNOW

ABOUT MARCH 15, 1971

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
NAME	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
<u>GILA RIVER</u>						
Bear Wallow	8100	3/14	1	0.4	5.3	3.7
Beaver Head	8000	3/15	0	0.0	0.9	2.0
Coronado Trail	8000	3/13	0	0.0	T	1.2
Crazy Horse (A)	10200	---	---	---	15.0	---
Emory Pass #1 *	7800	3/11	0	0.0	T	---
Emory Pass #2 *	7800	3/11	0	0.0	0.6	---
Frisco Divide	8000	3/15	0	0.0	0.8	1.5
Hannagan Meadows *	9090	3/15	1	0.2	9.3	9.1**
High Peak (A)	10500	---	---	---	15.0	---
Hummingbird (A)	10550	3/7	14	4.3	16.1	16.2**
McKnight Cabin * (A)	9300	3/11	0	0.0	3.0	---
Mogollon	7000	3/14	0	0.0	0.2	1.1
Nutrioso	8500	3/13	0	0.0	0.0	1.0
Redstone Trail	8600	3/14	4	1.4	6.8	6.9**
Rose Canyon	7300	3/14	0	0.0	3.0	1.4
Silver Creek Divide	9000	3/14	10	2.9	11.4	11.4**
State Line	8000	3/15	0	0.0	0.1	1.1
Whitewater (A)	10750	3/7	35	8.7	21.0	19.5**
<u>SALT RIVER</u>						
Baldy *	9125	3/12	6	2.0	4.7	6.8
Beaver Head	8000	3/15	0	0.0	0.9	2.0
Canyon Creek	7500	3/15	1	0.4	1.3	2.1**
Canyon Point	7600	3/15	1	0.4	2.0	2.5**
Coronado Trail	8000	3/13	0	0.0	T	1.2
Forest Dale	6430	3/15	0	0.0	0.0	0.2
Fort Apache	9160	3/12	15	3.8	6.2	7.4
Hannagan Meadows	9090	3/15	1	0.2	9.3	9.1**
Hawley Lake	8300	3/15	3	1.1	4.7	5.9**
Heber	7600	3/15	2	1.0	1.1	2.1
Maverick Fork	9050	3/12	5	2.0	5.3	8.4
McNary	7200	3/15	0	0.0	1.8	1.3
Milk Ranch	7000	3/15	0	0.0	1.1	0.5
Mt. Ord (A)	11000	3/16	44	12.3	19.8	20.2**
Nutrioso *	8500	3/13	0	0.0	0.0	1.0
Smith Cienega (A)	9850	3/16	25	8.5	18.2	15.1**
Wilson Lake	9000	3/12	26	7.4	9.1	9.7**
Workman Creek	6900	3/10	0	0.0	1.0	3.4
<u>BILL WILLIAMS RIVER</u>						
Camp Wood *	5700	3/15	0	0.0	0.0	0.3
Copper Basin Divide	6720	3/15	0	0.0	2.2	0.6**
Iron Springs	6200	3/15	0	0.0	0.3	0.2
+ 1953-67 15-year period. (*) Adjacent drainage. (**) 1953-67 Adjusted average. (A) Aerial observation: Water content estimated.						
- 8 -						



## SNOW

ABOUT MARCH 15, 1971

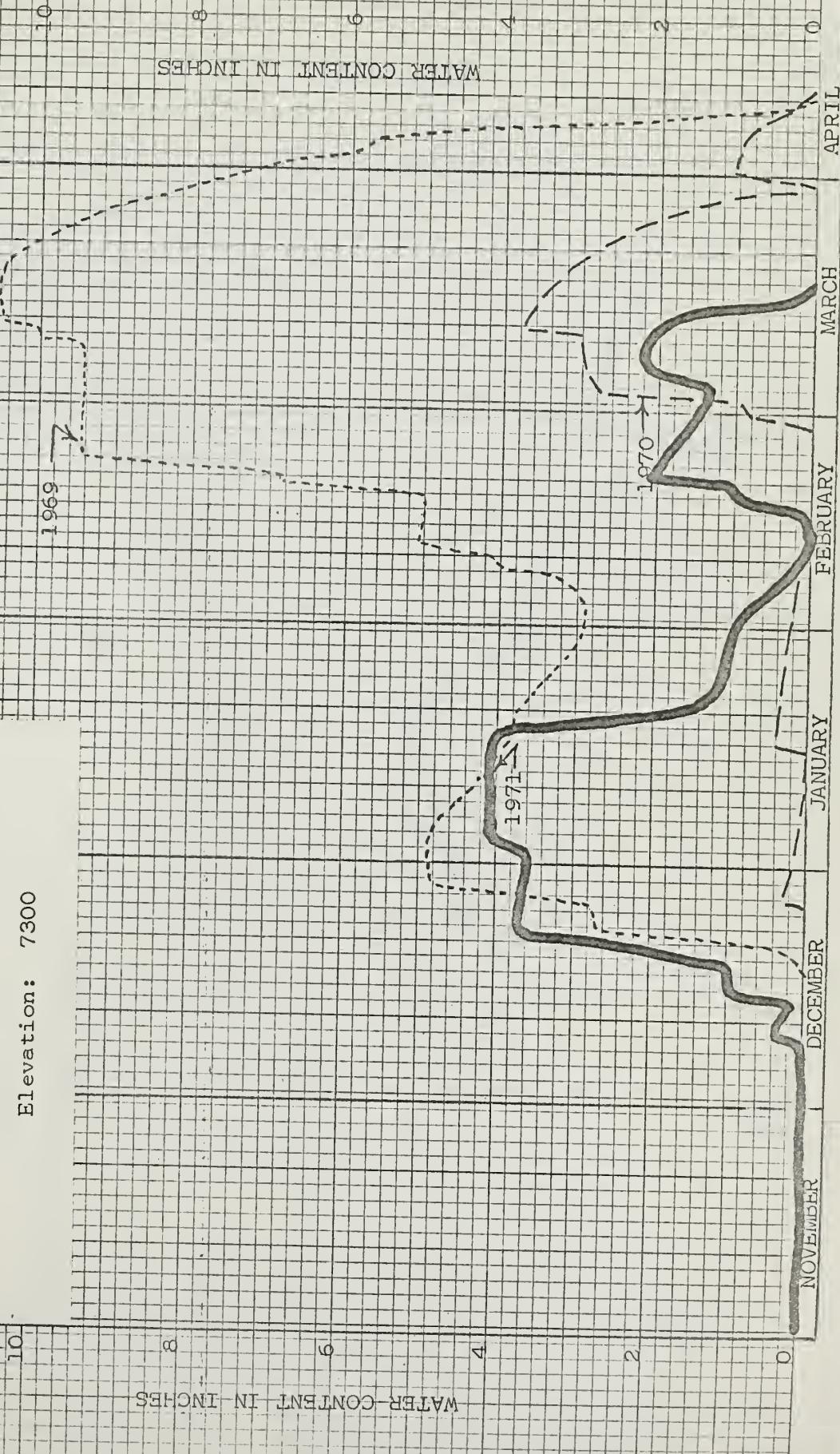
DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
<u>VERDE RIVER</u>						
Baker Butte	7300	3/15	4	1.6	2.9	3.8**
Camp Wood	5700	3/15	0	0.0	0.0	0.3
Chalender	7100	3/15	2	0.6	3.3	1.6
Copper Basin Divide	6720	3/15	0	0.0	2.2	0.6**
Fort Valley	7350	3/15	0	0.0	3.1	1.1
Gaddes Canyon	7600	3/15	10	3.5	3.8	3.7**
Happy Jack	7630	3/15	1	0.3	3.0	1.5
Iron Springs *	6200	3/15	0	0.0	0.3	0.2
Mingus Mountain	7100	3/15	0	0.0	0.5	0.3
Mormon Lake *	7350	3/15	3	1.1	3.7	2.3
Mormon Mountain	7500	3/15	5	1.9	5.6	3.4
Newman Park	6750	3/15	0	0.0	1.5	1.1**
Snow Bowl #1	10260	3/14	25	7.6	8.6	8.9**
Snow Bowl #2	11000	3/14	33	9.1	16.5	14.0**
White Horse Lake Jct.	7150	3/15	0	0.0	4.0	---
White Spar	6000	3/15	0	0.0	0.2	0.2**
<u>LOWER COLORADO RIVER</u>						
Bill Williams Intermediate	8550	3/15	15	4.2	7.4	---
Bill Williams Summit	8950	3/15	26	7.7	9.7	---
Bright Angel	8400	---	---	---	10.1	---
Chalender *	7100	3/15	2	0.6	3.3	1.6
Fort Valley	7350	3/15	0	0.0	3.1	1.1
Grand Canyon	7500	3/15	0	0.0	---	0.9
Williams Ski Run	7720	3/15	19	6.5	5.5	---
<u>LITTLE COLORADO RIVER</u>						
Agassiz	11200	---	---	---	---	---
Baldy	9125	3/12	6	2.0	4.7	6.8
Canyon Creek	7500	3/15	1	0.4	1.3	2.1**
Canyon Point	7600	3/15	1	0.4	2.0	2.5**
Cheese Springs	8600	3/12	17	4.9	6.4	---
Forest Dale	6430	3/15	0	0.0	0.0	0.2
Ft. Apache	9160	3/12	15	3.8	6.2	7.4
Fort Valley	7350	3/15	0	0.0	3.1	1.1
Happy Jack *	7630	3/15	1	0.3	3.0	1.5
Heber	7600	3/15	2	1.0	1.1	2.1
Inner Basin #1	10100	---	---	---	---	---
Inner Basin #2	9750	---	---	---	---	---
Inner Basin #3	10250	---	---	---	---	---
McNary	7200	3/15	0	0.0	1.8	1.3
Mormon Lake	7350	3/15	3	1.1	3.7	2.3
Mormon Mountain	7500	3/15	5	1.9	5.6	3.4
Nutrioso	8500	3/13	0	0.0	0.0	1.0
Snow Bowl #1	10260	3/14	25	7.6	8.6	8.9**
Snow Bowl #2	11000	3/14	33	9.1	16.5	14.0**
Wilson Lake *	9000	3/12	26	7.4	9.1	9.7**
+ 1953-67 15-year period. (*) Adjacent drainage. (**)					1953-67 Adjusted	
Average. (A) Aerial observation: Water content estimated.						



S N O W P I L L O W D A T A

BAKER BUTTE

Elevation: 7300





S N O W P I L L O W D A T A

MORMON MOUNTAIN

Elevation: 7500

1968

WATER CONTENT IN INCHES

WATER CONTENT IN INCHES

10  
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6  
4  
2  
0

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JULY



PRECIPITATION AT SELECTED ARIZONA STATIONS 1/

	Precipitation (Inches)			
	February - 1971		Current Water Year (Oct. 1970-February 1971)	
	Total	Departure from Normal	Total	Departure from Normal
Alpine	.09	- 1.29	3.64	- 3.14
Ash Fork	.56	- .59	2.29	- 2.48
Clifton	.25	- .66	2.55	- 1.73
Douglas Smelter	.61	+ .02	1.07	- 2.01
Flagstaff WSO*	1.48	- .30	5.16	- 2.62
McNary	.95	- 1.19	6.43	- 3.81
Payson Ranger Station	1.03	- 1.16	3.98	- 5.08
Phoenix WSO*	.35	- .50	1.29	- 2.09
Prescott (City)	1.02	- .92	3.29	- 4.70
Springerville	.24	- .29	1.81	- 1.16
Tucson WSO*	.50	- .34	2.70	- 1.14
Winslow WSO*	.25	- .23	.81	- 1.64
Yuma WSO*	.03	- .33	.12	- 1.45

1/ Data and Analysis furnished by Paul C. Kangieser  
 NOAA Climatologist for Arizona  
 National Weather Service, Phoenix

\* WSO - Weather Service Office



## PRECIPITATION (Inches)

ABOUT MARCH 15, 1971

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average +	This Year	Average +	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	3/14	.25	---	5.15	---	---
Hannagan Meadows	9030	3/15	.62	1.57*	4.96	11.67*	43
<u>SALT RIVER</u>							
Canyon Point	7600	3/15	.90	---	10.26	---	---
Hannagan Meadows	9030	3/15	.62	1.57*	4.96	11.67*	43
Little Wildcat (Heber Snow Course)	7600	3/15	1.22	1.57*	8.12	12.94*	63
Maverick Fork	9050	3/12	.65	1.29*	6.30	11.22*	56
Workman Creek **	6970	3/10	.42	1.69	7.70	15.57	50
Wilson Lake	9100	3/12	.80	---	6.95	---	---
<u>VERDE RIVER</u>							
Baker Butte	7300	3/15	.97	---	9.04	---	---
Copper Basin Divide	6720	3/15	.90	---	6.51	---	---
Fort Valley **	7350	3/15	.32	.92	5.22	8.18	64
Happy Jack **	7480	3/15	.58	1.21*	6.79	10.08*	67
Mingus Mountain	7660	3/15	.36	1.02	6.23	8.77	71
Mormon Mountain	7500	3/15	.60	---	11.49	---	---
<u>LITTLE COLORADO</u>							
Inner Basin #1	9830	---	---	---	---	---	---
Inner Basin #2	10050	---	---	---	---	---	---
Sheep Crossing (Baldy Snow Course)	9125	3/12	.60	1.17*	5.90	10.59*	56
Little Wildcat (Heber Snow Course)	7600	3/15	1.22	1.57*	8.12	12.94*	63
+ 1953-67 Average							
* Adjusted Average							
**Data Supplied by U.S. Forest Service							
- 13 -							



ABOUT MARCH 15, 1971

## SOIL MOISTURE

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average
<u>GILA RIVER</u>							
Frisco Divide	8000	48	13.3	1/15	5.7	10.4	11.3
<u>SALT RIVER</u>							
Black River Divide	9100	48	16.8	1/12	17.9	18.0	16.1
Canyon Creek	7500	48	18.3	1/15	17.9	18.2	15.2
Corduroy Creek	6000	36	13.5	1/12	8.7	14.0	9.0
McNary	7200	48	16.3	1/15	14.7	14.9	14.9
<u>VERDE RIVER</u>							
Mormon Mountain	7500	48	16.1	1/15	17.7	17.7	15.7
Newman Park	6750	48	17.7	1/15	18.6	18.8	16.7
† 1953-67 15-year average							
- 14 -							

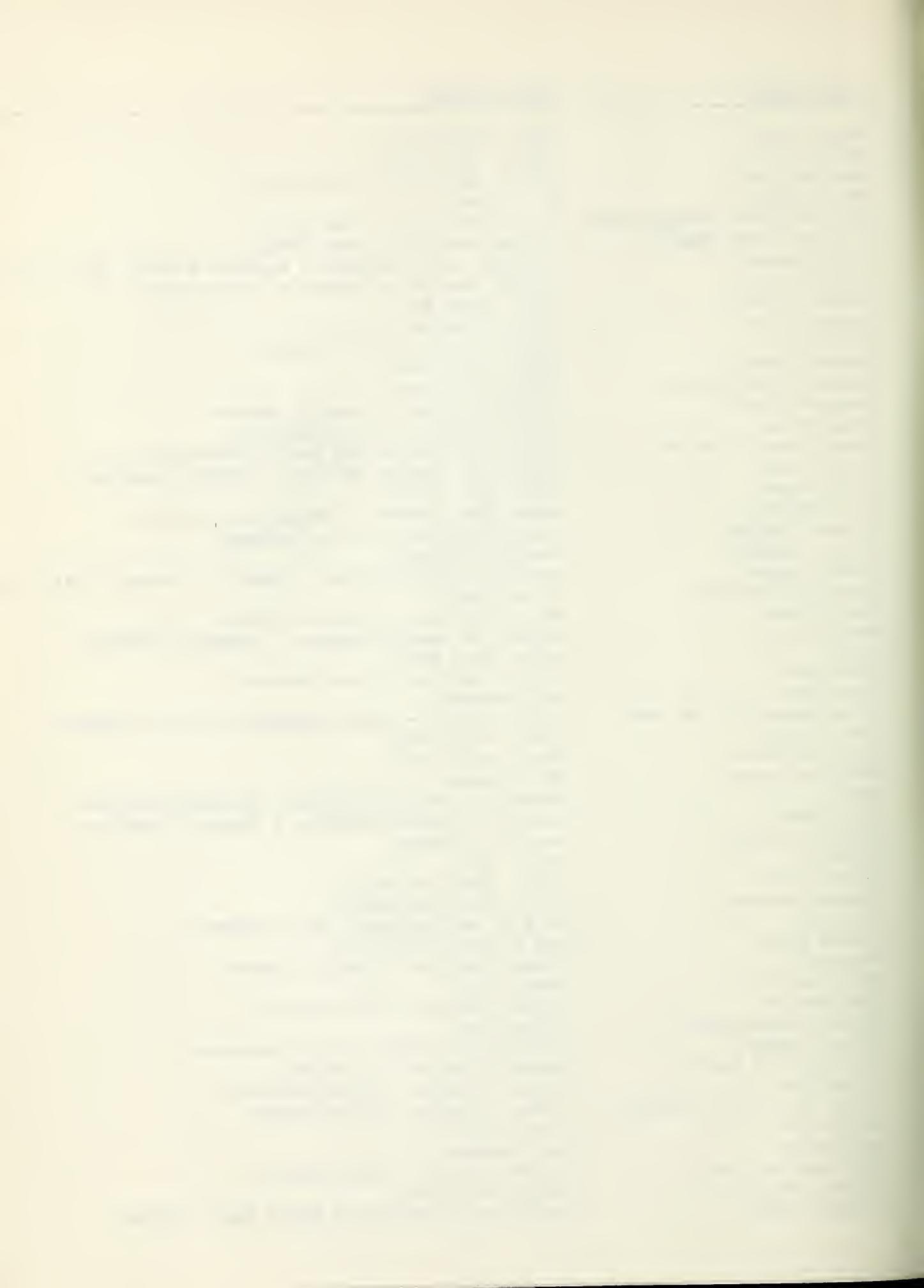


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**SNOW COURSE****SNOW SURVEYOR**

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Baker Butte	SCS - Dick Enz
Baldy	SCS - Bill Cole
Bear Wallow	Forest Service - Carl Sollers
Beaver Head	N. A. Josh
Bill Williams Intermediate	Forest Service - John Sotelo
Bill Williams Summit	Forest Service - John Sotelo
Bright Angel	National Park Service - Kenneth Hulick, Dist. Rgr.
Camp Wood	Forest Service - Walter G. Richardson
Canyon Creek	SCS - Dick Enz
Canyon Point	SCS - Dick Enz
Chalender	Forest Service - M. Freshour
Cheese Springs	SCS - Bill Cole
Copper Basin Divide	SCS - Bill Gray
Coronado Trail	Forest Service - John O. Maeder
Crazy Horse	Forest Service - Loyd Barnett
Emory Pass #1 and #2	SCS - Jim Powell and Travis Stevenson
Forest Dale	Bureau of Indian Affairs - Raymond Endfield
Ft. Apache	SCS - Bill Cole
Fort Valley	Rocky Mtn. Forest & Range Exp. Station
Frisco Divide	Forest Service - J. L. Lockwood
Gaddes Canyon	Paul G. Lidbeck
Grand Canyon	National Park Service - David A. Strope, Dist. Rgr.
Hannagan Meadows	N. A. Josh
Happy Jack	Forest Service - Warren Harris
Hawley Lake	Bureau of Indian Affairs - Raymond Endfield
Heber	SCS - Dick Enz
High Peak	Forest Service - Loyd Barnett
Hummingbird	Ray Freeman
Inner Basin #1, #2, #3	SCS and USBR - Jack Jorgensen and Jay Roberts
Iron Springs	SCS - Bill Gray
Maverick Fork	SCS - Bill Cole
McKnight Cabin	Ray Freeman
McNary	Bureau of Indian Affairs - Raymond Endfield
Milk Ranch	Bureau of Indian Affairs - Raymond Endfield
Mingus Mountain	Paul G. Lidbeck
Mogollon	James Lyon
Mormon Lake	SCS - Jack Jorgensen
Mormon Mountain	SCS - Jack Jorgensen
Mt. Ord	Salt River Project - Bill Warskow
Newman Park	SCS - Jack Jorgensen
Nutrioso	Forest Service - John O. Maeder
Redstone Trail	James Lyon
Rose Canyon	Forest Service - Carl Sollers
Silver Creek Divide	James Lyon
Smith Cienega	Salt River Project - Bill Warskow
Snow Bowl #1 and #2	Forest Service - Ky Porter
State Line	Forest Service - J. L. Lockwood
White Horse Lake Junction	Forest Service - John Sotelo
White Spar	SCS - Bill Gray
Whitewater	Ray Freeman
Williams Ski Run	Forest Service - John Sotelo
Wilson Lake	SCS - Bill Cole
Workman Creek	Rocky Mtn. Forest and Range Exp. Station



## The Following Organizations Cooperate in the Arizona Snow Survey Work

### FEDERAL

Department of Agriculture

Soil Conservation Service

Forest Service

Apache Forest

Coconino Forest

Coronado Forest

Gila Forest

Kaibab Forest

Prescott Forest

Rocky Mountain Forest and Range Experiment Station

Tonto Forest

Department of Commerce

Weather Bureau

Arizona Section

Department of Interior

Bureau of Reclamation

Region III

Geological Survey

Arizona District

Bureau of Indian Affairs

Fort Apache Reservation

San Carlos Irrigation Project

National Park Service

Grand Canyon National Park

Gila Water Commissioner

Safford, Arizona

### STATE

University of Arizona

Arizona Agricultural Experiment Station

Water Resource Research Center

### IRRIGATION PROJECTS

Salt River Valley Water Users' Association  
Phoenix, Arizona

San Carlos Irrigation and Drainage District  
Coolidge, Arizona

### PRIVATE

Southwest Forest Industries, Inc.  
McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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*"The Conservation of Water begins  
with the Snow Survey"*